Safety Precepts Unmanned Systems 15 Mar 06, Rev --

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Proposed Program Safety Precepts (PSPs)

PSP-1 The Program Office will establish and maintain an SSP consistent with MIL-STD-882

PSP-2 The Program Office will establish unifying safety precepts and processes for all programs under their cognizance to ensure:

- Safety consistent with mission requirements, cost and schedule
- Positive safety design features adequately mitigate all hazards presenting unacceptable mishap risk
- Each system can be safely used in a joint warfighting environment
- That all statutory safety regulations, laws, and requirements are met

PSP-3 That off-the-shelf items (e.g., COTS, GOTS, NDI), re-use items, original use items, design changes, technology refresh and technology upgrades (hardware and software) are assessed for safety

PSP-4 That all life cycle phases, including concept, preliminary design, detailed design, test, manufacture, deployment (to inventory), operation and disposal are addressed

Proposed Operational Safety Precepts (OSPs)

OSP-1	No operation will be executed without commensurate situational awareness
OSP-2	The unmanned system shall only be operated by the intended operator
OSP-3	The unmanned system is considered unsafe until a safe state can be verified
OSP-4	An unmanned system shall be in a verifiable safe state before the system is transported or weapons are loaded, powered, armed, or unloaded
OSP-5	Weapons will be loaded/energized as late as possible in the operational sequence
OSP-6	Only trained personnel using authorized procedures will operate and maintain unmanned combat and weapon systems

Proposed Design Safety Precepts (DSPs)

DSP-1	The unmanned system design shall provide positive measures to minimize the probability of personnel injury during all life cycle phases
DSP-2	The unmanned system shall respond to fulfill authorized operator commands
DSP-3	The unmanned system design shall provide positive measures to prevent control by anyone other than the intended operator
DSP-4	The unmanned system design shall provide control and situational awareness feedback adequate to support safe operations
DSP-5	There shall be positive safety design measures to isolate power from weapons or ordnance initiation circuits until intent to initiate
DSP-6	System design shall prevent firing of weapons into unmanned system structure or other weapons, and minimize hazards to personnel, equipment, and other vehicle weapons from missile exhaust, gun blast or ejecta

Proposed DSPs (cont'd)

DSP-7	A unmanned system shall mitigate through design the uncommanded fire/release of weapons or radiation of hazardous emitters
DSP-8	There shall be positive safety design measures to monitor and protect against hazardous system mode combinations
DSP-9	There shall be positive safety design measures for an authorized operator to abort a weapon fire sequence or return the system to a safe state
DSP-10	There shall be positive safety design measures for an authorized operator to safely change states and modes
DSP-11	Safety critical software shall preclude unintended/non-required functionality
DSP-12	There shall be positive means (for an authorized operator) to identify the state of an unmanned system
DSP-13	An unmanned system shall mitigate through design single point (preferably double point) or common mode failures for high (catastrophic) and serious (critical) risks

Proposed DSPs (Cont'd)

DSP-14	Use of hazardous materials will be minimized
DSP-15	There shall be positive measures to prevent exposure of personnel to the hazards of high voltage, toxic materials, excessive noise levels, and other known environments created by unmanned system equipment
DSP-16	There shall be positive measures to prevent the exposure of unmanned system personnel, ordnance or equipment to unsafe levels of radio frequency (RF), X-ray, or laser radiation